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Spatial Study of Sanitation Facilities in Dhule District.

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Abstract:

Sanitation is to be seen as a basic need, as basic as drinking water or food. A sanitary toilet within or near home, provides privacy and dignity to women. Sanitation coverage, which ought to be a way of life to safeguard health, is inadequate in many part of our country. In fact, problems like open defecation continue to remain the only alternative for the majority of the population in rural areas. The practice of open defecation in India is due to a combination of factors, the most prominent of them being the traditional behavioral pattern and lack of awareness of the people about the associated health hazards. Recognizing the link between healthy environment and sanitation, the Millennium Development Goals (MDGs) stipulate, inter alia, halving, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Accordingly, a spatial theory of district-scale sanitation is not immediately apparent. Clearly, the spatial relationship of district level toilet use cannot be viewed solely as a process of physical transmission. Rather, the potential spatial relationship of use across districts must be viewed as a result of variation in the supply and demand for sanitation. The demand for toilets largely operates through social norms, whereas the supply is mediated by institutional actors. This paper is an attempt to understand the spatial variation of toilet facilities and it's co-relation to education, socio economic condition and other factors in Dhule district.

Key world: *Tribal, Rural Sanitation, Toilet, Bathroom, Nirmal Bharat Abhiyan, sewage, swachhata,* Abhiyan, Strategy. Flushed toilet

Introduction:

Women and children are the most susceptible section of the society due to poor sanitation. In our tradition, women have to go in the open to defecate where they are vulnerable to various infections and diseases and in turn this pose threat to other women, men and children. Children are often caught by diarrhea and insects carry harmful diseases with them. So, unfortunately they become victim and carrier of the disease. Women going in open are forced to stand up when someone passes by. They always have to go either before sun rise or after sunset. However this will be unfair to say that only women and children carry the contaminants or diseases but men are likewise contributing to same by in-hygienic practices.

The concept of sanitation should include personal hygiene, home sanitation, safe water, and garbage, excreta and waste water disposal. The national sanitation programme covers all these with emphasis on each. Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal (WHO).

The practice of open defecation in India is due to a combination of factors, the most prominent of them being the traditional behavioral pattern and lack of awareness of the people about the associated health hazards. Recognizing the link between healthy environment and sanitation, the Millennium Development Goals (MDGs) stipulate, inter alia, halving, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The Total Sanitation Campaign (TSC) programme, the flagship programme of the Government, has set an ambitious target, beyond the MDG's and aims to achieve universal sanitation coverage in the country.

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Government, has set an ambitious target, beyond the MDG's and aims to achieve universal sanitation coverage in the country. Sanitation is to be seen as a basic need, as basic as drinking water or food. A sanitary toilet within or near home, provides privacy and dignity to women. Sanitation coverage, which ought to be a way of life to safeguard health, is inadequate in many part of our country. In fact, problems like open defecation continue to remain the only alternative for the majority of the population in rural areas.

In 1596 John Harington invented a new toilet for Queen Elizabeth called water toilet. The toilet was named 'Ajax' that had many features similar to today's toilets. There were some problems like sealing-off the odors mentioned by Queen Elizabeth (Blair, 2000).

World renowned expert Mr. Jack Sim, founder and president of the World Toilet Organization (WTO) took keen interest in sanitation issues and made it as his mission to improve sanitation across the globe. India has 'a lot of work to do' to improve sanitation said Mr. Jack sim. In another report of UNICEF claims that 1000 children aged fewer than five succumb every day. Such statements and reports have successfully tarnished the image of the country, which project itself as an emerging world economic superpower.

A number of field surveys have revealed that a high proportion of toilets are not being used for its designated purpose. Households without proper hygiene awareness have been using them as private bathing areas or have simply converted them into storage spaces.

Pathak K N (2015) elaborately discussed that unsafe disposal of the human excreta imposes significant threat to public health and environmental cost particularly to urban areas. A study has shown that it costs around 60 per cent of the country's GDP. As indicated in the National Urban Sanitation Policy, impacts of poor sanitation are especially significant for the urban poor (22 per cent of the total urban population), women, children and the elderly. It is also observed that inadequate discharge of untreated domestic/municipal waste water has resulted in contamination of 75 per cent of all surface water across India.

Gregory Pierce (2015) shows that urban rates of toilet use are markedly higher than in rural areas, underutilization of adequate sanitation remains an important obstacle to health in Indian cities, and we know little about spatial trends in urban areas.

Jha Nitish (2010) argues that economic, technical, institutional as well as social factors constrain access to safe drinking water and proper sanitation in India for both the urban and rural poor, and that coverage figures do not reflect this restricted access. It finds that, increasingly, communities are being required to manage their own water and sanitation schemes, not just in rural areas but in urban ones as well.

Vijayan K Pillai and Rupal Parekh (2015) Suggests that modernization improves the sanitation facilities resulting in significant gains in health for individuals.for the programme to be successful, we need strong political will which will bring modern amenities and public health education to the door steps of people.

George, R. (2009) summarizes the Big Necessity and Adventures in the World of Human Waste. Ghosh, A., & Cairncross, S. (2013) finds out the uneven progress of sanitation in India. Hueso, A. & Bell, B. (2013) examines policy failure reasons of sanitation campaign in India. Besley, T., R. Pande & Rao V. (2011) stated local politics in sanitation schemes fund allocation, miss management and lack of awareness in implementation of sanitation programme.

NOTEWORTHY CONTRIBUTION IN THE FIELD

However in the recent past several scholars have attempted to carry out field based investigations and researches on water supply and sanitation facilities from micro to macro level and such studies have involved interdisciplinary approaches. Sarkar R (2007),Manikutty, S. (1998), Deaton, A. & Grosh M. (2000), George, R. (2009), Mara, D. and Evans B.(2011), Agrawal Trisha

(2015), Pathak K.N (2015), Teltumbde A (2014), Spears, D (2012), GoI (2007),Geruso, M and D Spears (2015),Eagan & Gruber (2008),Mara(1985), Ramani (2008) worked on different aspects of rural sanitation.

Condition of Household Sanitary Facilities in India:

The Census 2011 has provided a lot of data related to sanitation, the findings released in May 2013 shows the availability of latrine facility in each of the household. There are 246,692,667 households (in 2001 it was 191,963,935) with provision for latrines (see table 1.1) in India. For the first time in India's history, census enumeration listed household latrines facilities on an integrated basis. The table below shows the present status of household sanitary facilities.

Table no 1.1

India: Sanitary Facilities at Household Level.

Sr no	Type of Facility	2001	2011
1	Water Closet (WC)	18.0	36.4
2	Pit Latrine	11.5	9.4
3	Other Latrine Types	6.9	1.1
4	No Latrine	63.6	53.1

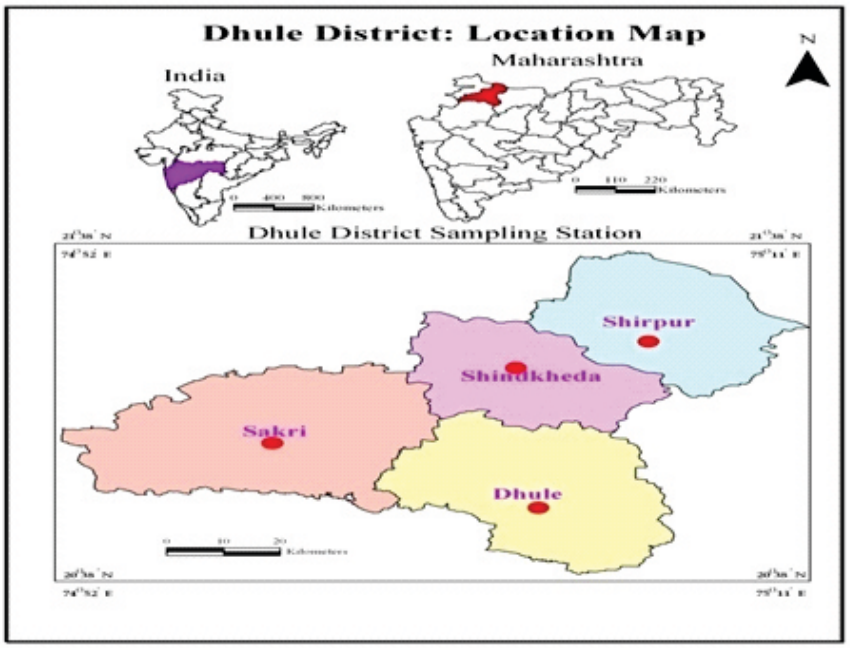
Source -Census 2011

Since first five year plan Government of India implemented various development programmes to improve the drinking water and sanitation facilities. Mainly these programmes are, Central Rural Sanitation Programme (CRSP 1986 – 1992),Central Rural Sanitation Programme (CRSP 1993 – 1997),Total Sanitation Campaign (TSC 2001),Nirmal Gram Puraskar –Incentives and Awards 2003,Total Sanitation Campaign (TSC) Program – (1999-2011), Nirmal Bharat Abhiyan (NBA-2012),Sulabh Sauchalay – Sulabh Movement, Sant Gadge Baba Sanitation Campaign, Swachha Bharat Mission (2014) etc. But till this day 53.1 percent population of India far away from toilet facilities, they suffer pathetic situation.

STUDY AREA:

Dhule district is located in the north-western part of the Maharashtra State. It extends between 20038' to 21038' N latitude and 74052' to 75011' East longitude. Dhule district covers an area of 8063.11 sq. km., which is 2.62% of the geographical area of the state. According to the 2001 census, Dhule district has total 678 inhibited villages and t 17, 07,947 people are residing within the district. Population density of the district was 212 persons per sq. km. Percentage of the rural population are 73.89 percent while 26.11 percent people live in the urban areas.

In Dhule district there are 25.97 per cent population is scheduled tribe. On other hand at the tehsil level wide variation too are found in the Dhule region. Sakri tehsil ranks first with 39.50 percent tribal population followed by shirpur, Dhule, and Shindkeda tehsils, with 30.86, 18.29 and 11.33 percent respectively. One finds a close association between the geographical environments with the highest share of tribal population in certain tribal areas.



DATA BASE AND METHODOOGY:

The study is based upon the secondary data as well as the primary data through village and household questionnaire designed for the purpose. Dhule district with 4 tehsil has 678 villages. At the first stage of sampling 2.5 per cent villages representing all the four tehsils were selected. The geographical study for a specific 17 villages is selected as Sample villages have been selected by stratified area sampling method while for household respondents random sampling method has been adopted for the objectives. Finally to gauge the Sanitation Facility, 17 sample villages and 514 sample households were selected for the detailed study. Empirical Methods is used for this research paper. The ultimate unit for the present study was the rural household. After the selection of 17 sample villages there was a problem to identify and select the representative and the manageable cross-section of the households for the detail study. Considering the limitations 7.27 per cent households from the 17 sample villages were selected for interview.

To have the details and microscopic study of the sanitation facilities, selected sample villages were divided into three categories

I. Villages with less than 200 households were placed in first category.
II. Villages with 200 to 400 households into second category and
III. Villages with more than 400 households were placed in the third category.

At the second stage proportion of the respondents to be selected was fixed as 15 per cent from first category, 10 per cent for the second category and above 5 per cent for the third category. The collected data has been processed and analyzed by using different quantitative, statistical technique.

Personal interview method has been adopted for interacting with the heads of the households for collecting the required data and information. Besides, the Sarpanch, Patwari, Members of Gram Panchayat, beneficiaries and other functionaries implementing the sanitation programmes and schemes in the villages have been interviewed.

Objectives:

- To examine the status of sanitation in the study region.
- To analyze the available sanitation facilities and emerge new ways to maintain sanitation for development of hygienic area.
- To identify various problems faced by villagers due to lack of toilet facilities.

Discussion:

The importance of sanitation is generally understood by the people on the upper levels in the village community. The idea that filth can cause disease is not fairly common. However, no practical ways have so far been devised to keep the village clean. Village councils have statutory powers to compel people to dig soakage pits so as to prevent water used in their houses from running into the lanes, and also to force them to have their garbage and manure pits outside the village. The resolutions and threats passed by the Gram Panchayat were both ineffective.

Table No. 1.2

Dhule District: Availability of Toilet Facilities in Selected Households.(Surveyed year 2016-17)

S. No.	Sample Villages	Toilet Facilities (in percent)				
		Tehasil	House hold	Flush	Dry/Pit	Open Space
1.	Ajnale	Dhule	274	11.00	22.00	67.00
2.	Akkadse	Sindkheda	169	20.00	40.00	40.00
3.	Amode	Sakri	186	22.00	44.00	34.00
4.	Budki	Shirpur	956	31.00.	38.00	31.00
5.	Charanmal	Sakri	494	17.00	62.00	21.00
6.	Domkani	Sakri	381	53.00	26.00	21.00
7.	Godas	Sakri	170	24.00	28.00	48.00
8.	Hatti Bk	Sakri	119	17.00	22.00	61.00
9.	Kurkhadi	Shirpur	321	09.00	22.00	69.00
10.	Malkatar	Shirpur	482	17.00	21.00	62.00
11.	Manjari	Sakri	717	28.00	50.00	22.00
12.	Palasner	Shirpur	822	24.00	53.00	23.00
13.	Pinjar Zadi	Sakri	425	09.00	34.00	57.00
14.	Sahur	Sindkheda	157	52.00	18.00	30.00
15.	Sevalde	Dhule	162	54.00	21.00	25.00
16.	Umarda	Shirpur	639	32.00	52.00	16.00
17.	Varzadi	Shirpur	592	07.00	14.00	79.00
Total Region		**----------**	**7066**	**25.30**	**33.85**	**40.85**

Source : Based on Household Questionnaire.(Surveyed year 2016-17)

The Umarda sample village is very neat and clean. 84.00 per cent households have their soakage pits, researcher noticed that all the garbage and manure pits are outside the village. Due to this Umarda B.K. village got recognition as 'Adarsh village' in the district under the 'Sant Gadgebaba Gram Swachhata Abhiyan'. Cent per cent households are ready to construct a toilet block. Every household planted a minimum two tress. The internal lanes are constructed by cement concrete under the 'Yashwant Rao Gram Samsudhhi Yojana'.

On the other hand in Domkani, Sahur and Kurkhadi sample villages, due to the continued blockage of wastewater people suffer from foul smell. The logged water area becomes the breeding ground for mosquitoes. Flies and various other germs causing serious health disorders in these villages. Malaria, Typhoid, Diarrhea, Jaundice and Influenza are some of the common diseases reported in these villages. The wastewater logged near the houses, adversely affects the housing environment. Thus, due to the ill developed drainage system the problem becomes worse during the rainy season, as the waste water along, with the rainwater spreads into the whole village, and becomes the breeding ground source for various diseases. It has been told by the villagers of Domkani that recently individuals and the groups of 4-5 houses have constructed the systematic pucca drains to regulate the wastewater. This clearly indicates that villagers have become aware of the need to construct the drains.

Table no.1.2 clearly indicates that 25.30 per cent of the sample respondents are using flush latrines while 33.85 per cent are using dry/pit toilet and 40.85 per cent households are forced to use the open space. The village wise tabulated data shows that Sevalde village which is near to the Dhule district headquarters (06km) has the highest per cent of Flush toilet owned by the households. Sevalde village ranks first where 54.0 per cent households are having Flush toilets followed Domkani, Sahur, Umarda, Budaki, Manjari, Godas,and Amode with 53.0, 52.0, 32.0, 31.0, 28.0, 24.0,and 22.0 per cent respectively. While in 06 sample villages number ranges 11.0 to 20.0 per cent. While remaining 3 sample villages the proportion of flush toilets found between 06.0 to 09.0 percent. Researcher has also been noticed that most of the pucca houses in the villages do not have the facility of flush toilet and people are forced to use open space for the purpose.

It has been informed and noticed in the recent years villagers have start constructing the dry toilets replacing the traditional one. Hence the proportion of dry/pit toilets has decreased. Charanmal. sample village ranks first where 62.0 per cent households are having dry toilets followed by Palasner ,Umarda, Manjari, Amode,and Akkadse, with 53.0, 52.0, 50.0, 44.0,and 40.0 per cent respectively.While ten sample villages the proportion ranges 38.0to 21.0 per cent. In Varzadi sample village only 14.0 percent sample house hold using dry/pit toilets relatively it is very lowest proportion in the study region.

Under the Jawahar Rozgar Yojana and special assistance provided by the Tribal Development Department, maximum dry/pit toilets are constructed in Charanmal sample village. As a result the proportion of dry toilet facilities has improved substantially in the region. In Palasner ,Umarda, Manjari, Amode, and Akkadse villages gram panchayat constructed public toilets. But these public toilets are hardly used by the local people due to poor maintenance and dirtiness, hence people prefer to use open space. Beside that some villagers are habitual to use open space.

In those villages where both the flush and dry latrine facilities are not available, respondents are forced to use open space for the purpose.Varzadi village ranks first, with highest proportion (79.0 per cent) of respondents using open space followed by Kurkhadi, Ajnale, Malkatar, Hatti Bk,and Godas with 69.0, 67.0, 57.0, 61.0 and 48.0 per cent respectively. While in the remaining 10 sample villages the proportion of using open space ranges. 21.0 to 40.0 per cent. The lowest proportion found in Umarda with 16.0 percent. Most of the villagers use the nearby places but at times availability of open space becomes the problem. In the recent years with expansion of various activities, growth of population and gradually the removal of trees and bushes, the problem of open space is emerging as the major problem especially for females. Beside that in rainy season due to mud, marshy land and unfair road several problems faced by the villagers.

Conclusion:

Due to the pathetic economic conditions, low literacy, dominance of tribal communities, traditional habits and lack of awareness about the health the proportion of sanitation facilities are comparatively very low.About 25.30 per cent of the sample respondents are using flush latrines while

33.85 per cent are using dry toilet and 40.85 per cent households are forced to use the open space. Sevalde village ranks first where 54.0 per cent households are having Flush toilets. Sevalde village which is near to the Dhule district headquarters has the highest per cent of Flush toilet owned by the households. Based on the direct observation of the village, it has been found that individual toilets are available for only few of the residents, while most of the people are excreting in open spaces. Thus, Sanitation facilities such as Sewage Management, Solid waste Management and Toilets were designed to be provided. Also ideas to motivate them to efficiently use the toilets instead of contaminating the surroundings were suggested. Till this day there is need to increase awareness about construction and use of toilet.

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